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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,877	02/09/2006	John Edward Hill	20912103855	2388
28886	7590	05/03/2007		
CLARK HILL, P.C. 500 WOODWARD AVENUE, SUITE 3500 DETROIT, MI 48226			EXAMINER EVANS, GEOFFREY S	
			ART UNIT 1725	PAPER NUMBER
			MAIL DATE 05/03/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/567,877	Applicant(s) HILL, JOHN EDWARD	
	Examiner Geoffrey S. Evans	Art Unit 1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 February 2007.
- 2a) ☒ This action is FINAL.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no disclosure in the specification, as originally filed, that the raised peripheral edge has a thickness of .007 inches. At most paragraph 14 discloses a raised peripheral edge having a height of 0.007 inches.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takasago et al. in Japan Patent document No. 2001-162,387 in view of Hayashi in U.S. Patent No. 5,284,043. Takasago et al. discloses providing coated sheets of metal (see paragraph 6), punching at least one embossment on at least one coated metal sheet, the embossment comprising a depression having a raised peripheral edge (element 15, see figure 2) and applying a laser beam (element 20), wherein the gases produced during the forming of the weld escape via the at least one embossment. Takasago et al. does not teach using a lance to form the embossment. Hayashi teaches forming a protrusion by embossing or lancing (e.g. see abstract) is an art recognized equivalent. It would

have been obvious to adapt Takasago et al. in view of Hayashi to provide this as an art recognized equivalent method of forming a depression having a raised peripheral edge.

4. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takasago et al. in Japan Patent document No. 2001-162,387 in view of Hayashi in U.S. Patent No. 5,284,043 as applied to claim 1 above, and further in view of Mori et al. in Japan Patent No. 4-279,291. Mori et al. teaches forming an array of embossments (see elements 33,34,35 and 36 in figure 4). It would have been obvious to adapt Takasago et al. in view of Hayashi and Mori et al. to provide this to ensure proper venting of the gases during laser welding. Regarding claim 5, determining the proper height of the raised peripheral edge to achieve good welding results along with venting of the gases produced by laser welding is considered a matter of routine experimentation in the absence of evidence of unexpected results.

5. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gu in WO 99/08829 in view of Dell Plane et al. in U.S. Patent No. 4,682,002, Muehlberger in U.S. Patent No. 5,637,242 and McCane et al. in U.S. Patent No. 6,592,947 or Ishii et al. in Japan Patent No. 4-4,145. Gu does not disclose applying fine particles on a sheet but instead uses a laser beam to create "protuberances". Dell Plane et al. teach that the only way of obtaining a "clean" weld between two metal sheets protected by using 10w vaporizing temperature materials is to provide between the metal sheets, in any way possible, a passage enabling the weld area to communicate externally, where "externally" is intended to mean any space enabling safe expansion of the said vaporizing gas (see column 4, lines 47-53). Muehlberger teaches coating steel

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particles on a surface by plasma spraying. McCane et al. teach coating with particles a galvanized sheet of metal to create an uneven surface. Alternatively Ishii et al. teach coating with particles to create voids between two plated stainless steel sheets. It would have been obvious to adapt Gu in view of Dell Piane et al., Muehlberger and McCane et al. or Ishii et al. to apply particles to the surface by plasma spraying instead of using the laser beam by the method disclosed in Gu so that less energy is needed to create the voids between the two sheets. Regarding claim 7, Muehlberger teaches plasma spraying steel particles (see column 7, line 28). It would have been obvious to adapt Gu in view of Dell Piane et al., Muehlberger, and McCane et al. or Ishii et al. to provide this to prevent weakening of the weld between the two galvanized steel sheets by using particles made of the same material as the workpieces.

6. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gu in WO 99/08829 in view of Dell Piane et al. in U.S. Patent No. 4,682,002, Schwankhart in U.S. Patent No. 6,525,293, and McCane et al. in U.S. Patent No. 6,592,947 or Ishii et al. in Japan Patent No. 4-4,145. Gu does not disclose applying fine particles on a sheet but instead uses a laser beam to create "protuberances". Dell Piane et al. teach that the only way of obtaining a "clean" weld between two metal sheets protected by using 10w vaporizing temperature materials is to provide between the metal sheets, in any way possible, a passage enabling the weld area to communicate externally, where "externally" is intended to mean any space enabling safe expansion of the said vaporizing gas (see column 4, lines 47-53). Schwankhart teaches plasma spraying zinc particles (powder) onto a workpiece (e.g. see abstract). McCane et al.

teach coating with zinc particles a galvanized sheet of metal to create an uneven surface. Alternatively Ishii et al. teach coating with zinc particles to create voids between two plated stainless steel sheets. It would have been obvious to adapt Gu in view of Dell Piane et al., Schwankhart and McCane et al. or Ishii et al. to apply zinc particles to the surface by plasma spraying instead of using the laser beam by the method disclosed in Gu to create the protuberances so that less energy is needed to create the voids between the two sheets.

7. Applicant's arguments filed 15 February 2007 have been fully considered but they are not persuasive. Regarding claim 1, Hayashi in U.S. patent No. 5,284,043 discloses that lancing is a known technique for creating a protrusion and is an art recognized equivalent to shearing or embossing. Regarding claim 3, it is known to plasma spray zinc particles (see Schwankhart in U.S. Patent No. 6,525,293) and to plasma spray steel particles (see Muehlberger in U.S. Patent No. 5,637,242), which is an art recognized equivalent method of spraying a coating on a surface.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

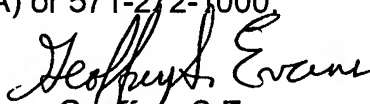
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fujimoto et al. in U.S. Patent No. 7,150,391 laser welding sheets together. Shinmyo et al. in Japan Patent No. 2003-220,482 uses a punch to form a projection or protusion. Ohnishi et al. in U.S. patent No. 4,362,078 cold works an groove by lancing edge 7 (see column 2,lines 33-35). Halliwell in U.S. Patent No. 6,342,272 discloses coating by various methods (see column 3,lines 5-6) and later in column 4,line 7 and 8 plasma spraying particles to increase surface roughness.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey S. Evans whose telephone number is (571)-272-1174. The examiner can normally be reached on Mon-Fri 6:30AM to 4:00 PM, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on (571)-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Geoffrey S Evans  
Primary Examiner  
Art Unit 1725

GSE